REMARKS

Reconsideration of the above-identified patent application, as amended, is respectfully requested.

The drawings are objected to as requiring suitable descriptive legends for FIGS. 3 and 4. Applicants accordingly submit herewith a replacement sheet for FIGS. 3 and 4 and an annotated sheet showing changes FIGS. 3 and 4 that introduce functional block and signal descriptions were appropriate. These additions are fully supported in the specification and no new matter has been added.

Claims 21 and 22 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claim 20 defines the step of embedding an encrypted message into a first portion of a carrier signal recited in claim 19 as including performing an exclusive-OR of the encrypted message with the first portion of the carrier signal. Claim 21 depends from claim 20 and defines the step of embedding message extraction information into a second portion of the carrier signal recited in claim 19 as including performing an exclusive-OR of the first portion of the carrier signal with the second portion of the carrier signal. Claim 22 depends from claim 21. It is important to note that the first portion of the carrier signal in claim 21 has, according to claim 20, already been exclusive-OR'd with the encrypted message.

According to the Examiner, the subject matter of claims 21 and 22 require saving the original value of the second portion of the carrier signal, and the disclosure fails to teach this feature. Applicants disagree, and direct the Examiner to page 7, lines 22 - 29 of applicants' specification. There it states that the original, unmodified image signal 66, corresponding to the carrier signal, may be made available in order to extract the encrypted message 72 from the composite signal 74. However, this cited passage goes on to state that the requirement of using the original image signal 66 is eliminated in the encrypted message extraction process by use of the composite signal generator 78. "Thus, in order to extract the embedded encrypted message 72, only composite signal 74 and the encrypting key 70 are needed" (page 7, lines 28 - 29). Withdrawal of this rejection is accordingly requested.

Claims 14 and 26 stand rejected under 35 U.S.C. § 112, second paragraph, resulting from inclusion of the phrase "substantially random." Applicants have herein amended claims 14 and 26 to make clear that the encryption sequence is a "pseudo-random" sequence. These amendments are fully supported in the specification and no new matter has been added.

Substantively, claim 19 stands rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,912,972 to Barton. Claim 23 stands rejected under 35 U.S.C. § 102(a) as being anticipated by Podilchuk et al. Claims 1 - 3, 6 - 8 and 25 - 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 0 359 325 A1 to Veldhuis in view of Nakamura et al. and U.S. Patent No. 5,195,136 to Hardy et al. Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Veldhuis, Nakamura and Hardy as applied to claim 1 and further in view of U.S. Patent No. 5,751,813 to Dorenbos. Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Veldhuis, Nakamura, Hardy and Dorenbos as applied to claim 9 and further in view of Schneier ("Applied Cryptography"). Claims 11 and 13-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Veldhuis in view of U.S. Patent No. 4,471,164 to Henry. Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Podilchuk as applied to claim 23 and further in view of Nakamura. Claims 4-5, 17-18, 20 and 29 are indicated as allowable if rewritten to overcome the 35 U.S.C. § 112 rejection(s) and to include all limitations of the base claim and any intervening claims.

Regarding the 35 U.S.C. § 102(e) rejection of claim 19, applicants note that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference, and the identical invention must be shown in as complete detail as is contained in the claim. (MPEP § 2131). Contrary to the Examiner's statement that all elements of claims 19 are disclosed in the Barton reference, this is simply not the case. Rather, each element of applicants' claim 19 is not disclosed in the Barton reference, and the 35 U.S.C. § 102(e) rejection of claim 19 is therefore unsupported by the cited reference and should be withdrawn.

For example, claim 19 requires the step of "embedding an encrypted message into a first portion of a carrier signal . . .", and further requires the step of "embedding

message extraction information into a second portion of the carrier signal . . ." Barton fails to show or disclose the step of embedding message extraction information into the second portion of the carrier signal. While the Examiner cites col. 9, line 55 - col. 10, line 2, and col. 10, lines 9-14 and 25-47 of Barton as disclosing this step, applicants disagree that these passages disclose all of the requirements of this step. Col. 9, line 55 - col. 10, line 2 discloses the organization of a data block in one specific hardware implementation of the Barton process. Col. 10, lines 9-14 disclose encoding each bit of the authentication signature into the least significant bit of the luminescence component of three pixels in a sequence. It should be noted that this passage refers to the step of embedding an encrypted message into the data block (carrier signal). Col. 10, lines 25-47 disclose processing of the input data through the hardware element of FIG. 3 in a manner that allows for the processing of each scan line, but does not disclose how the embedded, encrypted messages are extracted from the data block. Thus, none of the cited passages describe embedding message extraction information into a second portion of the carrier signal as required by applicants' claim 19.

At col. 7, lines 23 - 25 and col. 8, lines 9 - 13, Barton describes that the encryption technique in the form of a bit stream may be appended to the string to be embedded into the data block prior to embedding the encrypted message into the data block. Otherwise, the decryption technique must be known ahead of time. As it relates to applicants' claim 19, Barton thus describes appending message extraction information to the encrypted message that is embedded into the first portion of the carrier signal. However, Barton's technique does not disclose embedding the message extraction information in any other portion of the carrier signal other than the first portion, whereas applicants' claim 19 requires embedding the encrypted message into a second portion of a carrier signal. The § 102(e) rejection of claim 19 is therefore improper and should be withdrawn.

Regarding the 35 U.S.C. § 102(a) rejection of claim 23, applicants have herein canceled claims 23-24.

Regarding the 35 U.S.C. § 103(a) rejection of claims 1 - 3 and 6-10, applicants have herein canceled claims 1-3 and 6-10, and have amended claim 4 to include all limitations of claim 1. Claims 4 and 5 are now accordingly believed to be allowable.

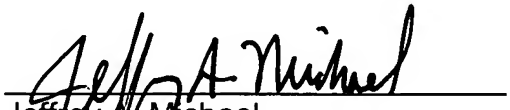
Regarding the 35 U.S.C. § 103(a) rejection of claims 11 -13, applicants have herein canceled claims 11-13. Applicants have also amended claim 14 to include all of the limitations of claim 11 and to clarify that the encryption sequence is a pseudo-random sequence that is neither taught nor suggested by any of the references of record. Claim 16 is also amended to depend from claim 14. Applicants have further amended claim 17 to include all of the limitations of claim 11. Claims 14-18 are now accordingly believed to be allowable.

Regarding the 35 U.S.C. § 103(a) rejection of claims 25 - 28, applicants have herein canceled claim 25, and have amended claim 26 to include all of the limitations of claim 25 and to clarify that the encryption sequence is a pseudo-random encryption sequence that is neither taught nor suggested by any of the references of record. Applicants have also amended claim 29 to include all of the limitations of claims 25 and 28. Claims 26 and 29 are now accordingly believed to be allowable.

Applicants also petition the U.S. Patent and Trademark Office for a one-month extension of time for responding to the above-mentioned application. A check in the amount of the fee therefor is enclosed. The commissioner is authorized to charge any further fees which may be due in connection with this petition, or to credit any overages in connection with this petition, to Deposit Account 10-0435, but not to include any payment of issue fees.

Claims 4-5, 14-22, 26 and 29 are believed to be in condition for allowance, and such action is solicited. The Examiner is cordially invited to contact the undersigned by telephone to discuss any unresolved matters.

Respectfully submitted,



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Attachments
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Amendments to the Drawings

The attached sheets of drawings include changes to FIGS. 3 and 4. The sheet identified in the top margin as a Replacement Sheet replaces the original sheet containing FIGS. 3 and 4. The sheet identified in the top margin as an Annotated Sheet Showing Changes is a marked-up copy of the original sheet containing FIGS. 3 and 4 showing the changes to FIGS. 3 and 4 in red.

Attachments: Replacement Sheet

Annotated Sheet Showing Changes

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INTRODUCED SIGNAL IDENTIFICATION BLOCKS, CONSISTENT WITH FIG. 4, MOVED REFERENCE NUMBER POINTER LINES TO SIGNAL IDENTIFICATION BLOCKS, AND INTRODUCED BLOCK DESCRIPTIONS

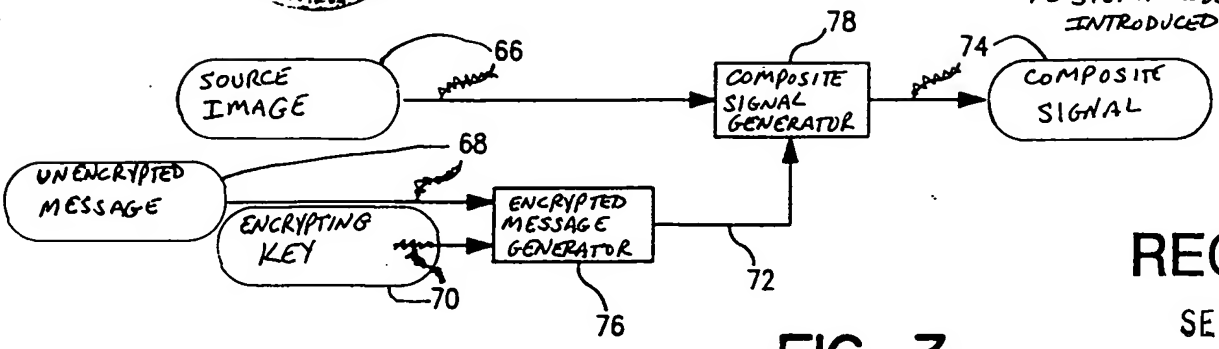

FIG. 3

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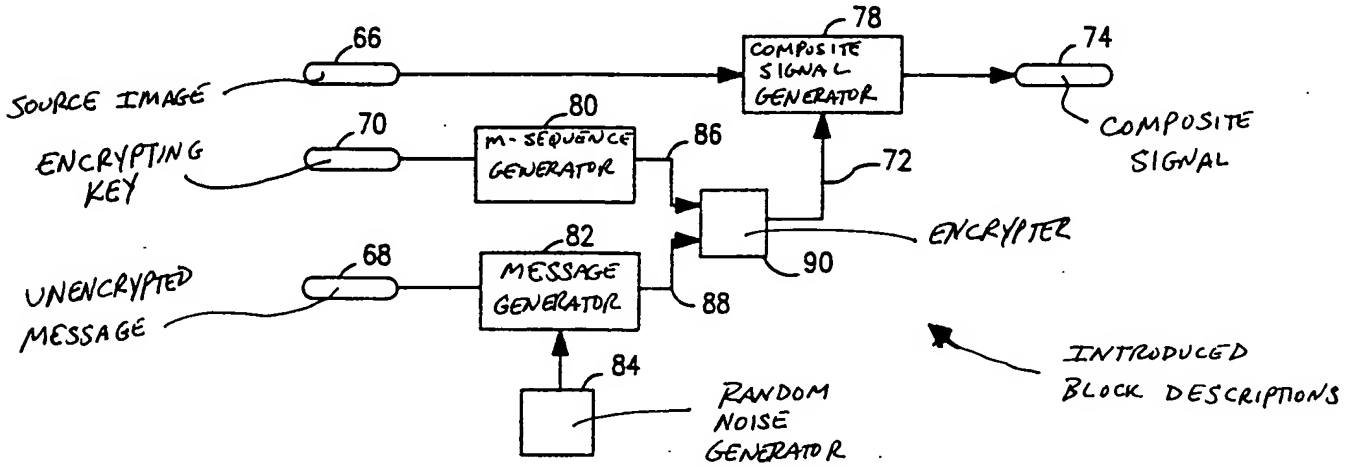

FIG. 4

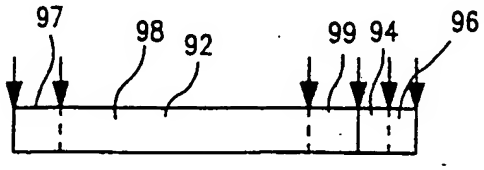

FIG. 5

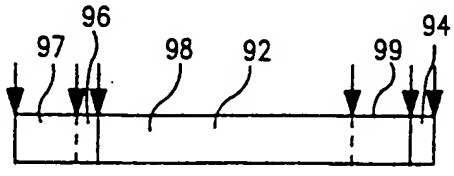

FIG. 6

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